What we claim is:

1. A substrate for information recording medium composed of crystallized glass comprising

SiO_2 : 35 — 65 mol%

Al_2O_3 : 5 — 25 mol%

MgO : 10 — 40 mol% and

TiO_2 : 5 — 15 mol%,

wherein the sum of the above components is equal to or more than 92mol%, and main crystals contained in the crystallized glass are enstatite and/or its solid solution.

2. The substrate according to claim 1, wherein a molar ratio of Al_2O_3 to MgO (Al_2O_3/MgO) is from equal to or more than 0.2 to less than 0.5.

3. The substrate according to claim 1, wherein the crystallized glass comprises

SiO_2 : 40 — 60 mol%

Al_2O_3 : 7-22 mol%

MgO : 12 — 35 mol% and

TiO_2 : 5.5 — 14 mol%.

4. The substrate according to claim 1, wherein the crystallized glass comprises Y_2O_3 in an amount equal to or less than 10 mol%.

5. The substrate according to claim 1, wherein the crystallized glass comprises ZrO_2 in an amount equal to or less than 10 mol%.

6. A substrate for information recording medium composed of crystallized glass consisting essentially of

SiO_2 : 35 — 65 mol%

Al_2O_3 : 5 — 25 mol%

MgO : 10 — 40 mol%

TiO_2 : 5 — 15 mol%

Y_2O_3 : 0 — 10 mol%

ZrO_2 : 0 — 10 mol%

R_2O : 0 — 5 mol% (wherein R is at least one selected from the group of Li, Na and K)

RO : 0 — 5 mol% (wherein R is at least one selected from the group of Ca, Sr and Ba)

$As_2O_3+Sb_2O_3$: 0 — 2 mol%

$SiO_2 + Al_2O_3 + MgO + TiO_2$: 92mol% or more;

and main crystals contained in the crystallized glass are enstatite and/or its solid solution.

7. A substrate for information recording medium composed of crystallized glass consisting essentially of

SiO_2 : 35 — 65 mol%

Al_2O_3 : 5 — 25 mol%

MgO : 10 — 40 mol%

TiO_2 : 5 — 15 mol%

Y_2O_3 : 0 — 10 mol%

ZrO_2 : 0 — 10 mol%

R_2O : 0 — 5 mol% (wherein R is at least one selected from the group of Li, Na and K)

RO : 0 — 5 mol% (wherein R is at least one selected from the group of Ca, Sr and Ba)

$As_2O_3+Sb_2O_3$: 0 — 2 mol%

$SiO_2 + Al_2O_3 + MgO + TiO_2$: 92mol% or more;

and the crystallization degree of the crystallized glass is in a range of 20 to 70 vol%.

8. The substrate according to claim 1, wherein the crystallized glass comprises Y_2O_3 in an amount of 0.3 to 8 mol%.

9. The substrate according to claim 6, wherein the crystallized glass comprises Y_2O_3 in an amount of 0.3 to 8 mol%.

10. The substrate according to claim 7, wherein the crystallized glass comprises Y_2O_3 in an amount of 0.3 to 8 mol%.

11. The substrate according to claim 1, wherein the crystallized glass comprises ZrO_2 in an amount of 1 to 10 mol%.

12. The substrate according to claim 6, wherein the

crystallized glass comprises ZrO_2 in an amount of 1 to 10 mol%.

13. The substrate according to claim 7, wherein the crystallized glass comprises ZrO_2 in an amount of 1 to 10 mol%.

14. The substrate according to claim 11, wherein the crystallized glass comprises ZrO_2 in an amount of 1 to 5 mol%.

15. The substrate according to claim 12, wherein the crystallized glass comprises ZrO_2 in an amount of 1 to 5 mol%.

16. The substrate according to claim 13, wherein the crystallized glass comprises ZrO_2 in an amount of 1 to 5 mol%.

17. The substrate according to claim 1, wherein the crystallized glass comprises R_2O in an amount of 1 to 5 mol%, wherein R is at least one selected from the group of Li, Na and K.

18. The substrate according to claim 17, wherein the R_2O is K_2O.

19. The substrate according to claim 1, wherein the crystallized glass comprises TiO_2 in an amount of 8 to 14 mol%.

20. The substrate according to claim 6, wherein the crystallized glass comprises TiO_2 in an amount of 8 to 14 mol%.

21. The substrate according to claim 7, wherein the crystallized glass comprises TiO_2 in an amount of 8 to 14 mol%.

22. The substrate according to claim 1, wherein the substrate exhibits a Young modulus equal to or more than 140 Gpa.

23. The substrate according to claim 6, wherein the substrate exhibits a Young modulus equal to or more than 140 Gpa.

24. The substrate according to claim 7, wherein the substrate exhibits a Young modulus equal to or more than 140 Gpa.

25. The substrate according to claim 1, wherein the crystallized glass comprises

SiO_2 : 35—43 mol%,

Al_2O_3 : 9-20 mol%,

MgO : 30—39 mol%,

Y_2O_3 : 1-3 mol%,

TiO_2 : 8.5—15 mol%, and

ZrO_2 : 1—5 mol%.

26. The substrate according to claim 25, wherein a molar ratio of Al_2O_3 to MgO (Al_2O_3/MgO) is equal to or more than 1.35.

27. The substrate according to claim 25, wherein the substrate exhibits a Young modulus equal to or more than 160 Gpa.

28. The substrate according to claim 1, wherein the mean particle size of the crystal particles contained in the crystallized glass is equal to or less than 100nm.

29. The substrate according to claim 6, wherein the mean particle size of the crystal particles contained in the crystallized glass is equal to or less than 100nm.

30. The substrate according to claim 7, wherein the mean particle size of the crystal particles contained in the crystallized glass is equal to or less than 100nm.

31. The substrate according to claim 1, wherein the mean particle size of the crystal particles contained in the crystallized glass is equal to or less than 70nm.

32. The substrate according to claim 6, wherein the mean particle size of the crystal particles contained in the crystallized glass is equal to or less than 70nm.

33. The substrate according to claim 7, wherein the mean particle size of the crystal particles contained in the crystallized glass is equal to or less than 70nm.

34. The substrate according to claim 1, wherein the substrate has a polished surface with a surface roughness Ra (JIS B0601) equal to or less than 1nm.

35. The substrate according to claim 6, wherein the substrate has a polished surface with a surface roughness Ra (JIS B0601) equal to or less than 1nm.

36. The substrate according to claim 7, wherein the substrate has a polished surface with a surface roughness Ra (JIS B0601) equal to or less than 1nm.

37. A substrate for information recording medium composed of crystallized glass comprising enstatite and/or its solid solution as main crystals and the substrate has a polished surface with a surface roughness Ra (JIS B0601) equal to or less than 1nm.

38. The substrate according to claim 37, wherein the substrate has a polished surface with a surface roughness Ra (JIS B0601) equal to or less than 0.5nm.

39. The substrate according to claim 1, wherein light transparency at 600nm through the substrate with 1 mm thickness is equal to or more than 10%.

40. The substrate according to claim 6, wherein light transparency at 600nm through the substrate with 1 mm thickness is equal to or more than 10%.

41. The substrate according to claim 7, wherein light transparency at 600nm through the substrate with 1 mm thickness is equal to or more than 10%.

42. The substrate according to claim 37, wherein light transparency at 600nm through the substrate with 1 mm thickness is equal to or more than 10%.

43. The substrate according to claim 1, wherein thermal extension coefficient of the crystallized glass is in the range of from 65 x 10^{-7} to 85 x 10^{-7}/℃.

44. The substrate according to claim 6, wherein thermal extension coefficient of the crystallized glass is in the range of from 65 x 10^{-7} to 85 x 10^{-7}/℃.

45. The substrate according to claim 7, wherein thermal extension coefficient of the crystallized glass is in the range of from 65 x 10^{-7} to 85 x 10^{-7}/℃.

46. The substrate according to claim 37, wherein thermal extension coefficient of the crystallized glass is in the range of from 65 x 10^{-7} to 85 x 10^{-7}/℃.

47. A substrate for information recording medium composed of crystallized glass comprising enstatite and/or its solid solution as main crystals and the mean particle size of the crystal particles contained in the crystallized glass as main crystals is equal to or less than 100nm.

48. The substrate according to claim 47, wherein the mean particle size of the crystal particles contained in the crystallized glass as main crystals is equal to or less than 70nm

49. A substrate for information recording medium composed of crystallized glass comprising enstatite and/or its solid solution as main crystals and light transparency at 600nm through the substrate with 1 mm thickness is equal to or more than 10%.

50. The substrate according to claim 1, wherein the crystallization degree of the crystallized glass is equal to or more than 50 vol%.

51. The substrate according to claim 6, wherein the crystallization degree of the crystallized glass is equal to or more than 50 vol%.

52. The substrate according to claim 7, wherein the crystallization degree of the crystallized glass is equal to or more than 50 vol%.

53. The substrate according to claim 37, wherein the crystallization degree of the crystallized glass is equal to or more than 50 vol%.

54. The substrate according to claim 47, wherein the crystallization degree of the crystallized glass is equal to or more than 50 vol%.

55. The substrate according to claim 49, wherein the crystallization degree of the crystallized glass is equal to or more than 50 vol%.

56. The substrate according to claim 1, wherein the total content of enstatite and/or its solid solution ranges from 70 to 90 vol%, the content of titanate ranges from 10 to 30 vol%, and the sum of enstatite and/or its solid solution and titanate is equal to or more than 90 vol%.

57. The substrate according to claim 6, wherein the total content of enstatite and/or its solid solution ranges from 70 to 90 vol%, the content of titanate ranges from 10 to 30 vol%, and the sum of enstatite and/or its solid solution and titanate is equal to or more than 90 vol%.

58. The substrate according to claim 7, wherein the total content of enstatite and/or its solid solution ranges from 70 to 90 vol%, the content of titanate ranges from 10 to 30 vol%, and the sum of enstatite and/or its solid solution and titanate is equal to or more than 90 vol%.

59. The substrate according to claim 37, wherein the total content of enstatite and/or its solid solution ranges from 70 to 90 vol%, the content of titanate ranges from 10 to 30 vol%, and the sum of enstatite and/or its solid solution and titanate is equal to or more than 90 vol%.

60. The substrate according to claim 47, wherein the total content of enstatite and/or its solid solution ranges from 70 to 90 vol%, the content of titanate ranges from 10 to 30 vol%, and the sum of enstatite and/or its solid solution and titanate is equal to or more than 90 vol%.

61. The substrate according to claim 49, wherein the total content of enstatite and/or its solid solution ranges from 70 to 90 vol%, the content of titanate ranges from 10 to 30 vol%, and the sum of enstatite and/or its solid solution and titanate is equal to or more than 90 vol%.

62. A substrate for information recording medium composed of crystallized glass comprising enstatite and/or its solid

solution as main crystals and thermal extension coefficient of the crystallized glass is in the range of from 65 x 10^{-7} to 85 x 10^{-7}/℃.

63. The substrate according to claim 62, wherein the thermal extension coefficient of the crystallized glass is in the range of from 73 x 10^{-7} to 83 x 10^{-7}/℃.

64. The substrate according to claim 1, wherein the crystallized glass substantially does not comprise quarts solid solution as the main crystals.

65. The substrate according to claim 6, wherein the crystallized glass substantially does not comprise quarts solid solution as the main crystals.

66. The substrate according to claim 7, wherein the crystallized glass substantially does not comprise quarts solid solution as the main crystals.

67. The substrate according to claim 37, wherein the crystallized glass substantially does not comprise quarts solid solution as the main crystals.

68. The substrate according to claim 47, wherein the crystallized glass substantially does not comprise quarts solid solution as the main crystals.

69. The substrate according to claim 49, wherein the crystallized glass substantially does not comprise quarts solid solution as the main crystals.

70. The substrate according to claim 62, wherein the crystallized glass substantially does not comprise quarts solid solution as the main crystals.

71. The substrate according to claim 1, wherein the crystallized glass substantially does not comprise spinel as a crystal phase.

72. The substrate according to claim 6, wherein the crystallized glass substantially does not comprise spinel as a crystal phase.

73. The substrate according to claim 7, wherein the crystallized glass substantially does not comprise spinel

as a crystal phase.

74. The substrate according to claim 37, wherein the crystallized glass substantially does not comprise spinel as a crystal phase.

75. The substrate according to claim 47, wherein the crystallized glass substantially does not comprise spinel as a crystal phase.

76. The substrate according to claim 49, wherein the crystallized glass substantially does not comprise spinel as a crystal phase.

77. The substrate according to claim 62, wherein the crystallized glass substantially does not comprise spinel as a crystal phase.

78. The substrate according to claim 1, wherein the crystallized glass substantially does not comprise ZnO.

79. The substrate according to claim 6, wherein the crystallized glass substantially does not comprise ZnO.

80. The substrate according to claim 7, wherein the crystallized glass substantially does not comprise ZnO.

81. The substrate according to claim 37, wherein the crystallized glass substantially does not comprise ZnO.

82. The substrate according to claim 47, wherein the crystallized glass substantially does not comprise ZnO.

83. The substrate according to claim 49, wherein the crystallized glass substantially does not comprise ZnO.

84. The substrate according to claim 62, wherein the crystallized glass substantially does not comprise ZnO.

85. The substrate according to claim 1, wherein the information recording medium is a magnetic disk.

86. The substrate according to claim 6, wherein the information recording medium is a magnetic disk.

87. The substrate according to claim 7, wherein the information recording medium is a magnetic disk.

88. The substrate according to claim 37, wherein the information recording medium is a magnetic disk.

89. The substrate according to claim 47, wherein the information recording medium is a magnetic disk.

90. The substrate according to claim 49, wherein the information recording medium is a magnetic disk.

91. The substrate according to claim 62, wherein the information recording medium is a magnetic disk.

92. An information recording medium comprising a recording layer on the substrate according to any one of claims 1-34.

93. The information recording medium according to claim 92, wherein the recording layer is a magnetic recording layer.

94. A process for preparation of a substrate for an information recording medium composed of crystallized glass comprising

SiO_2 : 35—65 mol%

Al_2O_3 : 5—25 mol%

MgO : 10—40 mol% and

TiO_2 : 5—15 mol%,

wherein the sum of the above components is equal to or more than 92mol%, and main crystals contained in the crystallized glass are enstatite and/or its solid solution;

wherein the above process comprises steps of:

melting glass starting materials at 1400 to 1650℃ to prepare a glass,

molding the resulting glass into a plate-shaped glass, and subjecting the plate-shaped glass to crystallization.

95. The process according to claim 94, wherein the glass starting materials comprises K_2O and the melting temperature is from 1450 to 1600℃.

96. The process according to claim 94, wherein the glass starting materials comprises Y_2O_3 and the molding of the glass into a plate shape is conducted with a mold at a temperature of from 600 to 680℃.

97. A process for preparation of a substrate for an

information recording medium consisting of crystallized glass comprising

SiO_2 : 35 — 65 mol%

Al_2O_3 : 5 — 25 mol%

MgO : 10 — 40 mol% and

TiO_2 : 5 — 15 mol%,

Y_2O_3 : 0 — 10 mol%

ZrO_2 : 0 — 6 mol%

R_2O : 0 — 5 mol% (wherein R is at least one selected from the group of Li, Na and K)

RO : 0 — 5 mol% (wherein R is at least one selected from the group of Ca, Sr and Ba)

$As_2O_3+Sb_2O_3$: 0 — 2 mol%

$SiO_2 + Al_2O_3 + MgO + TiO_2$: 92mol% or more;

and main crystals contained in the crystallized glass are enstatite and/or its solid solution;

wherein the above process comprises steps of:

melting glass starting materials at 1400 to 1650℃ to prepare a glass,

molding the resulting glass into a plate-shaped glass, and subjecting the plate-shaped glass to crystallization.

98. The process according to claim 97, wherein the crystallization is carried out by heating the molded glass to a temperature of from 850 to 1150 ℃.

99. The process according to claim 98, wherein the heating is carried out by heating the molded glass to a temperature of from 500 to 850℃ at a heating rate of 5 to 50 ℃/min and then heating the molded glass at a heating rate of 0.1 to 10 ℃/min.

100. A substrate for an information recording medium composed of crystallized glass comprising.

SiO_2 : 35 — 65 mol%

Al_2O_3 : 5 — 25 mol%

MgO : 10 — 40 mol% and

TiO_2 : 5 — 15 mol%,

wherein the sum of the above components is equal to or more than 92mol%, main crystals contained in the crystallized glass are enstatite and/or its solid solution, and the crystal glass does not comprise ZnO;

wherein the above crystallized glass is prepared by a process comprising a step of heat-treatment of a glass comprising SiO_2, Al_2O_3, MgO and TiO_2 at a temperature of from 850 to 1150℃ to obtain a crystallized glass.

101. A substrate for an information recording medium composed of crystallized glass substantially consisting of

SiO_2 : 35—65 mol%

Al_2O_3 : 5—25 mol%

MgO : 10—40 mol% and

TiO_2 : 5—15 mol%,

Y_2O_3 : 0—10 mol%

ZrO_2 : 0—6 mol%

R_2O : 0—5 mol% (wherein R is at least one selected from the group of Li, Na and K)

RO : 0—5 mol% (wherein R is at least one selected from the group of Ca, Sr and Ba)

$As_2O_3+Sb_2O_3$: 0—2 mol%

$SiO_2 + Al_2O_3 + MgO + TiO_2$: 92mol% or more;

wherein the above crystallized glass is prepared by a process comprising a step of heat-treatment of a glass comprising SiO_2, Al_2O_3, MgO and TiO_2 at a temperature of from 850 to 1150℃ to obtain a crystallized glass.

102. The substrate of claim 100 wherein the heat treatment is carried out for 1 to 4 hours.

103. The substrate of claim 101 wherein the heat treatment is carried out for 1 to 4 hours.

104. The substrate of claim 100 wherein the heat treatment is carried out at a temperature of from 875 to 1000 ℃.

105. The substrate of claim 101 wherein the heat treatment is carried out at a temperature of from 875 to 1000 ℃.